

**VOLUNTEER FIREFIGHTERS'
COMPENSATION ACT
of the
STATE OF MONTANA**

**ACTUARIAL VALUATION
as of June 30, 2005**

Prepared by

Mark O. Johnson, F.S.A.
Consulting Actuary



Milliman

Consultants and Actuaries

111 SW Fifth Avenue, Suite 3700
Portland, OR 97204
Tel +1 503 227.0634
Fax +1 503 227.7956
www.milliman.com

October 4, 2005

Retirement Board
Volunteer Firefighters' Compensation Act
State of Montana

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Volunteer Firefighters' Compensation Act (System) as of June 30, 2005. Details about the actuarial valuation are contained in the following report.

I certify that the information included in this report is complete and accurate to the best of my knowledge and belief. All calculations have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the applicable Standards of Practice adopted by the American Academy of Actuaries.

Milliman has been engaged by MPERA as an independent actuary. The undersigned is a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, and an Enrolled Actuary, and is experienced in performing actuarial valuations for large public employee retirement systems.

Actuarial computations presented in this report are for purposes of analyzing the sufficiency of future contributions. Actuarial computations under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirements. The computations in this report have been made on a basis consistent with our understanding of the Retirement Board's funding policies and GASB Statement No. 25. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, different determinations may be needed for other purposes.

Any distribution of this report must be in its entirety, including this cover letter, unless prior written consent is obtained from Milliman.

Respectfully submitted,

Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

MOJ:wp

**MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
	ACTUARIAL CERTIFICATION	
1	SCOPE OF THE REPORT	1
2	SUMMARY OF FINDINGS AND ANALYSIS OF THE FUNDING LEVEL	2
3	ACTUARIAL VALUATION RESULTS.....	8
4	ACTUARIAL METHODS AND ASSUMPTIONS	16
5	SUMMARY OF BENEFIT PROVISIONS	19
6	SUMMARY OF MEMBERSHIP DATA.....	20

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

ACTUARIAL CERTIFICATION

To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Volunteer Firefighters' Compensation Act (System) as of June 30, 2005.

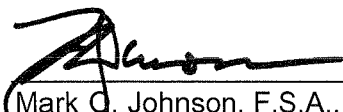
In preparing the valuation, we relied upon the financial information, membership data, and benefit provisions furnished by the System. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

The Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the System. The Board adopted all of the actuarial methods and assumptions used in the 2005 valuation.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the System and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuation are appropriate for purposes of the valuation, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the System. Nevertheless, the emerging costs of the System will vary from those presented in this report to the extent that actual experience differs from that projected by the assumptions.

The actuarial valuation was prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set for disclosures by Governmental Accounting Standards Board Statement No. 25.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.



Mark C. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 1
SCOPE OF THE REPORT

This report presents the results of our actuarial valuation of the System as of June 30, 2005.

A summary of the findings resulting from this valuation is presented in Section 2 of the report and the underlying calculations are summarized in more detail in Section 3.

All of the calculations of the valuation were carried out using certain assumptions as to the future experience of the System in matters affecting the actuarial cost. Section 4 summarizes the most important of these assumptions and describes the actuarial methods used to calculate costs.

Section 5 outlines the benefit provisions of the System.

The membership data which were supplied to us are summarized in Section 6.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 2
SUMMARY OF FINDINGS AND ANALYSIS OF THE FUNDING LEVEL

The costs of a retirement system are not determined by the actuary. The ultimate costs of a system are determined by adding all of the benefits and expenses that are paid, and subtracting all investment earnings. These costs cannot be determined exactly until the last member or beneficiary has received the final benefit payment due.

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs in order to allocate them to the appropriate generation of members and taxpayers. The ideal goal is for contributions to remain essentially a constant percentage of covered payroll as long as the assumptions and methods reflect the emerging experience of the system and its members with reasonable accuracy.

MEMBERSHIP DATA

We have developed the following comparisons between the membership in this and the prior actuarial valuations:

	<u>June 30, 2005</u>	<u>June 30, 2004</u>
Number of Members		
Retirees and Beneficiaries	966	944
Vested Terminated	687	671
Active	<u>2,754</u>	<u>2,687</u>
Total Membership	4,407	4,302

More detailed membership statistics are shown in Section 6.

DETERMINATION OF NORMAL COST

The **Normal Cost** represents the cost assigned to an average member for a given year such that it would meet the continuing costs of that particular benefit, if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost from the 2004 valuation compared to the Normal Cost in this valuation, expressed per number of active members. **TABLE 1** provides more details on the Normal Cost. We have calculated the Normal Cost two times for the 2005 valuation: first based on the prior plan provisions, and secondly including the impact of the plan changes since the 2004 valuation.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

	2005 Actuarial Valuation		2004
	Revised Benefits	Previous Benefits	Actuarial Valuation
Number of Active Members	2,754	2,754	2,687
Normal Cost Rate			
Retirement	\$ 145.46	\$ 141.19	\$ 139.43
Death	3.52	3.52	3.53
Withdrawal	32.57	31.76	32.75
Total Normal Cost Rate	\$ 181.55	\$ 176.47	\$ 175.71

The Normal Cost Rate is expected to remain fairly stable as long as the benefits are not amended, experience emerges as assumed, the demographic characteristics of the membership remain reasonably consistent, and the actuarial assumptions are not changed.

DETERMINATION OF THE ACTUARIAL LIABILITY

The next step in the actuarial valuation process is to project all future benefit payments from the System for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments.

The summation of the discounted values of all of the projected benefit payments for all current members, at the assumed rate of return, is called the **Actuarial Present Value of Projected Benefits**. Details are shown in **TABLE 2** and summarized below.

(\$000)	2005 Actuarial Valuation		2004
	Revised Benefits	Previous Benefits	Actuarial Valuation
Actuarial Present Value of Projected Benefits			
Retired Members	\$ 11,868	\$ 11,868	\$ 11,605
Inactive Members	5,129	5,129	4,973
Active Members	16,230	14,849	14,414
Total Value of Projected Benefits	\$ 33,227	\$ 31,846	\$ 30,992

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The Actuarial Present Value of Future Normal Costs is subtracted from the Actuarial Present Value of Projected Benefits to arrive at the **Actuarial Liability**, the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the System, and if all actuarial assumptions had been realized. The following is a summary from **TABLE 2**.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

(\$000)	2005 Actuarial Valuation		2004 Actuarial Valuation
	Revised Benefits	Previous Benefits	
Actuarial Present Value of:			
Projected Benefits	\$ 33,227	\$ 31,846	\$ 30,992
Future Normal Costs	<u>2,454</u>	<u>2,383</u>	<u>2,312</u>
Actuarial Liability	\$ 30,773	\$ 29,463	\$ 28,680

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the System. The market value of assets was reported to us as of June 30, 2005. However, because the underlying calculations in the actuarial valuation are long-term in nature, it is advantageous to smooth out short-term fluctuations in the market value of assets.

The asset smoothing method projects an Expected Value of Assets using the assumed rate of investment return, then recognizes the difference between the Expected Value and the Market Value over a four-year period. The calculation of the Actuarial Value of Assets is shown in **TABLE 3** and summarized below.

(\$000)	Gain or (Loss)	Reserve Factor	Smoothing Reserve	Value of Assets
Market Value on June 30, 2005				21,600
2002-03	\$ (122)	25%	(31)	
2003-04	810	50%	405	
2004-05	(113)	75%	<u>(85)</u>	
Smoothing Reserve			\$ 289	<u>(289)</u>
Actuarial Value of Assets				\$ 21,311

UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

The **Unfunded Actuarial Liability** is the excess of the Actuarial Liability over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Liability.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Liability. The calculation of the Unfunded Actuarial Liability or Actuarial Surplus is shown in **TABLE 4** and summarized below.

(\$000)	2005 Actuarial Valuation		2004 Actuarial Valuation
	Revised Benefits	Previous Benefits	
Actuarial Liability	\$ 30,773	\$ 29,463	\$ 28,680
Actuarial Value of Assets	<u>21,311</u>	<u>21,311</u>	<u>20,058</u>
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 9,462	\$ 8,152	\$ 8,622
Funded Ratio – Actuarial Value	69%	72%	70%
Funded Ratio – Market Value	70%	73%	70%

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Liability. A funded Ratio of 100% means the Actuarial Value of Assets equals the Actuarial Liability, and the System could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed.

A Funded Ratio over 100% indicates the System has an Actuarial Surplus.

ACTUARIAL GAINS AND LOSSES

Comparing the Unfunded Actuarial Liability as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Liability on the valuation date and the Expected Unfunded Actuarial Liability projected from the prior valuation date using the actuarial assumptions in effect for the one-year period.

TABLE 5 shows the Actuarial Liability as of June 30, 2004, and the elements to project that figure forward to June 30, 2005: the Normal Cost, less benefits paid, plus a charge for interest at the assumed rate of 8% per year. The same table shows the Actuarial Value of Assets as of June 30, 2004, and the elements to project that figure forward to June 30, 2005: The net cash flow (contributions less benefits and expenses), plus a charge for interest at the assumed rate of 8%.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

The following is a summary of the actuarial gains or losses during the one-year period.

	(\$000)
Unfunded Actuarial Liability	
Actual as of June 30, 2004	\$ 8,622
Expected as of June 30, 2005	\$ 8,215
Actual as of June 30, 2005	<u>9,462</u>
Actuarial (Gain) or Loss	\$ 1,247
(Gain) or Loss by Source	
Investment Loss	\$ 362
Liability Gain	(425)
Plan Amendment	<u>1,310</u>
Net from All Sources	\$ 1,247

CALCULATION OF CONTRIBUTION RATE

The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment for the Unfunded Actuarial Liability, over a rolling 20-year amortization period. The calculations are shown in **TABLE 6** and summarized below.

	2005 Actuarial Valuation		2004 Actuarial Valuation
	Revised Benefits	Previous Benefits	
Normal Cost	\$ 499,992	\$ 486,008	\$ 472,136
UAL (Surplus)	\$ 9,461,808	\$ 8,151,799	\$ 8,622,149
Years to Amortize	20	20	20
Rate of Amortization	\$ 717,358	\$ 618,037	\$ 653,698
Calculated Contribution Rate			
Normal Cost Rate	\$ 499,992	\$ 486,008	\$ 472,136
Rate of Amortization	<u>717,358</u>	<u>618,037</u>	<u>653,698</u>
Total Contribution Rate	\$ 1,217,350	\$ 1,104,045	\$ 1,125,834

Based on the assumptions contained in this report, the current contributions are sufficient to fund the current and projected benefits from the System.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

DISCLOSURE INFORMATION - GASB No. 25

The disclosure of the Schedule of Funding Progress calculated in accordance with Statement No. 25 of the Governmental Accounting Standards Board and is shown in **TABLES 7 AND 8**.

The Annual Required Contribution is equal to the Normal Cost plus an amortization of the Unfunded Actuarial Liability, if any. The contribution for the 2004-05 fiscal year met the parameters of Statement No. 25 in the previous valuation.

**MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

**SECTION 3
ACTUARIAL VALUATION RESULTS**

The following tables document the findings of the actuarial valuation.

TABLE 1	NORMAL COSTS
TABLE 2	SUMMARY OF ACTUARIAL REQUIREMENTS
TABLE 3	ACTUARIAL VALUE OF ASSETS
TABLE 4	UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS
TABLE 5	ACTUARIAL GAINS AND LOSSES
TABLE 6	CALCULATION OF CONTRIBUTION RATE
TABLE 7	SCHEDULE OF FUNDING PROGRESS
TABLE 8	SOLVENCY TEST

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 1
NORMAL COSTS

	2005 Actuarial Valuation		2004
	Revised	Previous	Actuarial
	Benefits	Benefits	Valuation
Normal Cost			
Service Retirement	\$ 400,579	\$ 388,836	\$ 374,651
Death	9,706	9,706	9,484
Withdrawal	<u>89,707</u>	<u>87,466</u>	<u>88,001</u>
Total Normal Cost Rate	\$ 499,992	\$ 486,008	\$ 472,136
Number of Active Members	2,754	2,754	2,687
Normal Cost Rate			
Retirement	\$ 145.46	\$ 141.19	\$ 139.43
Death	3.52	3.52	3.53
Withdrawal	<u>32.57</u>	<u>31.76</u>	<u>32.75</u>
Total Normal Cost Rate	\$ 181.55	\$ 176.47	\$ 175.71
Present Value of Future Normal Costs (\$000)	\$ 2,454	\$ 2,383	\$ 2,312

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 2
SUMMARY OF ACTUARIAL REQUIREMENTS

(\$000)	2005 Actuarial Valuation		2004
	Revised Benefits	Previous Benefits	Actuarial Valuation
Retired Members			
Service Retirement	\$ 11,825	\$ 11,825	\$ 11,564
Disability Retirement	29	29	29
Beneficiaries	<u>14</u>	<u>14</u>	<u>12</u>
Retired Member Total	\$ 11,868	\$ 11,868	\$ 11,605
Inactive Members	\$ 5,129	\$ 5,129	\$ 4,973
Active Members			
Service Retirement	\$ 13,814	\$ 12,599	\$ 12,111
Pre-retirement Death	123	119	119
Withdrawal	<u>2,293</u>	<u>2,131</u>	<u>2,184</u>
Active Member Total	\$ 16,230	\$ 14,849	\$ 14,414
Present Value of Future Projected Benefits	\$ 33,227	\$ 31,846	\$ 30,992
Present Value of Future Normal Costs	<u>2,454</u>	<u>2,383</u>	<u>2,312</u>
Actuarial Liability	\$ 30,773	\$ 29,463	\$ 28,680

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 3
ACTUARIAL VALUE OF ASSETS

<u>Fiscal Year</u>	<u>Cash Flow</u>	<u>Expected Value</u>	<u>Gain or (Loss)</u>	<u>Market Value</u>
2001-02				\$ 16,785
2002-03	\$ (102)	\$ 18,022	\$ (122)	17,900
2003-04	(45)	19,285	810	20,095
2004-05	10	21,713	(113)	21,600

<u>Fiscal Year</u>	<u>Gain or (Loss)</u>	<u>Reserve Factor</u>	<u>Smoothing Reserve</u>
2002-03	\$ (122)	25%	(31)
2003-04	810	50%	405
2004-05	(113)	75%	<u>(85)</u>
			\$ 289

Fair Market Value on June 30, 2005	\$ 21,600
Less, Asset Smoothing Reserve	<u>(289)</u>
Actuarial Value of Assets on June 30, 2005	\$ 21,311

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 4
UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

(\$000)	2005 Actuarial Valuation		2004 Actuarial Valuation
	Revised Benefits	Previous Benefits	
<u>Actuarial Value</u>			
Actuarial Liability	\$ 30,773	\$ 29,463	\$ 28,680
Actuarial Value of Assets	21,311	21,311	20,058
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 9,462	\$ 8,152	\$ 8,622
Funded Ratio (AV)	69%	72%	70%
<u>Market Value</u>			
Actuarial Liability	\$ 30,773	\$ 29,463	\$ 28,680
Market Value of Assets	21,600	21,600	20,095
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 9,173	\$ 7,863	\$ 8,585
Funded Ratio (MV)	70%	73%	70%

**MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

**TABLE 5
ACTUARIAL GAINS AND LOSSES**

(\$000)	<u>Expected</u>	<u>Actual</u>	<u>(Gain) or Loss</u>
2004 Actuarial Liability	\$ 28,680		
Normal Costs	472		
Benefits Paid	(1,517)		
Expected Earnings at 8%	<u>2,253</u>		
Actuarial Liability	\$ 29,888	\$ 30,773	\$ 885
 2004 Actuarial Value of Assets	 \$ 20,058		
Net Cash Flow	10		
Expected Earnings at 8%	<u>1,605</u>		
Actuarial Value of Asset	<u>21,673</u>	<u>21,311</u>	<u>362</u>
 Unfunded Actuarial Liability or (Actuarial Surplus)	 \$ 8,215	 \$ 9,462	 \$ 1,247
 Summary Actuarial (Gain) or Loss by Source			
Investment (Gain) or Loss			\$ 362
Liability (Gain) or Loss			(425)
Plan Amendment			<u>1,310</u>
Total Actuarial (Gain) or Loss			\$ 1,247

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 6
CALCULATION OF CONTRIBUTION RATE

	<u>2005 Actuarial Valuation</u>		<u>2004</u>
	<u>Revised</u>	<u>Previous</u>	<u>Actuarial</u>
	<u>Benefits</u>	<u>Benefits</u>	<u>Valuation</u>
Normal Cost Rate	\$ 499,992	\$ 486,008	\$ 472,136
Unfunded Actuarial Liability (Surplus)	\$9,461,808	\$8,151,799	\$8,622,149
Years to Amortize	20	20	20
Rate of Amortization Contribution or (Credit)	\$ 717,358	\$ 618,037	\$ 653,698
Calculated Contribution Rate			
Normal Cost Rate	\$ 499,992	\$ 486,008	\$ 472,136
Amortization Payment ⁽¹⁾	<u>717,358</u>	<u>618,037</u>	<u>653,698</u>
Total Calculated Rate	\$1,217,350	\$1,104,045	\$1,125,834
Amortization Period Based on Current Revenue			
Actual Contributions for Fiscal Year Preceding Valuation Date	\$1,527,264	\$1,527,264	\$1,434,068
Amortization Period Based on Actual Contributions ⁽²⁾	11.9 years	9.7 years	11.3 years

(1) The amortization payment is based on 3.25% inflation in the future revenue stream, with a discount rate of 8.00%.

(2) Assuming actual contributions increase at 3.25% per year.

**MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

DISCLOSURE INFORMATION - GASB No. 25

**TABLE 7
SCHEDULE OF FUNDING PROGRESS
(DOLLARS IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
June 30, 1996	\$11,504	\$16,636	69%	\$ 5,132	n/a	n/a
June 30, 1998	13,941	18,354	76	4,412	n/a	n/a
June 30, 2000	17,769	16,752	106	(1,017)	n/a	n/a
June 30, 2002	19,254	26,808	72	7,554	n/a	n/a
June 30, 2004	20,058	28,680	70	8,622	n/a	n/a
June 30, 2005	21,311	30,773	69	9,462	n/a	n/a

**TABLE 8
SOLVENCY TEST
(DOLLARS IN THOUSANDS)**

	(1)	(2)	(3)		Coverage Ratios		
Actuarial Valuation Date	Active Member Accounts	Inactive Actuarial Liability	Employer Financed Active Liability	Actuarial Value of Assets	(1)	(2)	(3)
June 30, 1996	\$ -	\$ 8,558	\$ 8,078	\$11,504	100%	100%	36%
June 30, 1998	-	9,143	9,210	13,941	100	100	52
June 30, 2000	-	9,614	7,138	17,769	100	100	114
June 30, 2002	-	15,631	11,177	19,254	100	100	32
June 30, 2004	-	16,578	12,102	20,058	100	100	29
June 30, 2005	-	16,997	13,776	21,311	100	100	31

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 4
ACTUARIAL METHODS AND ASSUMPTIONS

This section of the report describes the actuarial methods and assumptions used in this valuation. These methods and assumptions have been chosen by the Retirement Board based on our recommendations. The Retirement Board has the sole authority to select the methods and assumptions used in this actuarial valuation. The recommendations were formed on the basis of recent experience of the System and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the System and the members of the System in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the System's benefits.

In our opinion, the current actuarial methods and assumptions are reasonable and appropriate for this System. The assumptions were developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with applicable Standards of Practice adopted by the American Academy of Actuaries.

RECORDS AND DATA

The data used in the valuation consist of financial information and records of age, service and income of contributing members, former contributing members and their survivors. All of the data were supplied by the System and are accepted for valuation purposes without audit.

ACTUARIAL COST METHOD

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to when they are earned, rather than when they are paid. There are a number of methods in use for making a determination.

The funding method used in this valuation is the Entry Age Cost Method. Under this method the actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the working lifetime of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Liability.

The excess of the Actuarial Liability over the Actuarial Value of Assets is called the Unfunded Actuarial Liability. If the Actuarial Value of Assets exceeds the Actuarial Liability, the difference is called the Actuarial Surplus.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

ASSET VALUATION METHOD

Asset values were supplied by the System and were accepted without audit by us. The Actuarial Value of Assets is the market value, adjusted by a four-year recognition of gains and losses.

AMORTIZATION METHOD

The Unfunded Actuarial Liability is amortized over a rolling 20-Year amortization period assuming increases in the annual payments at the assumed 3.25% rate of inflation. Current contributions equal to or in excess of the Normal Cost plus amortization of Unfunded Actuarial Liability calculated on this basis are deemed to be sufficient to fund the plan benefits.

INVESTMENT RETURN

The future investment earnings of the assets of the plan are assumed to accrue at a net annual rate of 8.00%, net of all administrative and investment-related expenses.

MORTALITY

The probabilities of mortality are based on the following published tables:

Healthy Retirees, Beneficiaries and Non-Retired Members

Males	1994 Male Uninsured Pensioner Table (-1)
Females	1994 Female Uninsured Pensioner Table (-1)

Disabled Retirees

Males	IRS Revenue Ruling 96-7 Male Table (-3)
Females	IRS Revenue Ruling 96-7 Female Table (+1)

Age	Healthy Members		Disabled Retirees	
	Male	Female	Male	Female
50	0.250%	0.141%	2.085%	1.697%
55	0.428	0.224	2.587	1.976
60	0.762	0.415	3.194	2.344
65	1.391	0.819	3.933	2.828
70	2.336	1.367	4.900	3.492
75	3.661	2.192	6.468	4.710
80	6.007	3.802	8.522	6.346
85	9.636	6.557	10.971	9.015
90	14.995	11.247	14.405	13.322
95	23.194	18.352	19.372	20.176

**MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

SERVICE RETIREMENT

The assumed rates of retirement used in this valuation are shown below.

<u>Age</u>	<u>w/ 10 Yrs</u>	<u>w/ 20 Yrs</u>
Under 55	-	-
55 - 59	-	100%
60 & over	100%	100%

All vested terminated members are assumed to retire when first eligible for an unreduced benefit.

OTHER TERMINATIONS OF MEMBERSHIP

The assumed rates of termination, other than for retirement or death, are shown below for selected ages.

<u>Age</u>	<u>Rate</u>
25	12.79%
30	12.33
35	11.61
40	10.34
45	8.30
50	5.32

PROBABILITY OF MARRIAGE

100% of all non-retired members are assumed to be married. Male spouses are assumed to be four years older than female spouses.

Changes in Actuarial Assumptions Made for this Valuation

The following method and assumptions were revised since the last valuation:

Actuarial Methods

- ◆ None.

Economic Assumptions

- ◆ None.

Demographic Assumptions

- ◆ None.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 5
SUMMARY OF BENEFIT PROVISIONS

All of the calculations contained in this report are based on our understanding of the benefit and eligibility provisions of the system. The provisions used in this valuation are summarized below for reference purposes.

Service Retirement	Eligibility:	Age 55 and 20 years of service, or Age 60 and 10 years of service.
	Benefit:	\$7.50 per year of service, up to a maximum of \$225 (30 years of service credit).
	Normal Form:	Monthly benefit for the life of the member. Survivorship benefits are limited to the first 40 months of benefit payment.
Return to Service	Eligibility:	A member may continue to be a volunteer not receiving service credit and continue to draw a full pension benefit.
Disability Retirement	Eligibility:	Service disability.
	Benefit:	\$7.50 per year of service, with a minimum of \$75 and a maximum of \$225 per month.
Death before Retirement	Eligibility:	10 years of service.
	Benefit:	\$7.50 per year of service for 40 months.
Termination Benefit	Eligibility:	Accrued benefit at retirement age of 60.
Contributions	Members:	None.
	State:	5% of premium taxes collected.

Plan Changes Since Prior Valuation

Senate Bill 197, passed in April 2005, amended the Plan to allow members who were active as of the date of passage to accrue up to 30 years of service credit regardless of age.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 6
SUMMARY OF MEMBERSHIP DATA

The following tables depict the participant data that was used in the valuation. Table 9 is a history of participant characteristics for the System. Table 10 displays the distribution of Active Members by age and service. Table 11 is a distribution of the retirees by age, showing average monthly benefits. Table 12 is a distribution of Vested Inactive Members by age.

TABLE 9
MEMBERSHIP HISTORY

	<u>2005</u>	<u>2004</u>	<u>2002</u>	<u>2000</u>	<u>1998</u>	<u>1996</u>
Active Members						
Number	2,754	2,687	2,609	2,502	2,537	2,474
Average Age	43.9	43.9	43.5	42.7	42.2	-
Average Service	8.5	8.6	8.6	8.7	8.5	-
Inactive Members						
Service Retirement	957	934	865	818 ⁽¹⁾	761	724
Disability Retirement	2	2	11	10 ⁽²⁾	-	-
Survivors	7	8	8	11 ⁽³⁾	-	-
Vested Deferred	<u>687</u>	<u>671</u>	<u>679</u>	<u>624</u>	<u>608</u>	<u>564</u>
Total Inactive Members	1,653	1,615	1,563	1,463	1,369	1,288
Total Membership	4,407	4,302	4,172	3,965	3,906	3,762

Notes:

- (1) Beginning in 2000, service retirements exclude members who originally retired on a disability, and beneficiaries of members who died after retirement.
- (2) Beginning in 2000, disability retirements include all members who originally retired on a disability, regardless of their current age.
- (3) Beginning in 2000, survivors include beneficiaries of members who died after retirement, as well as beneficiaries of members who died prior to retirement.

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 10
DISTRIBUTION OF ACTIVE MEMBERS

<u>Age</u>	<u>Years of Service</u>			
	<u>Under 5</u> <u>Number</u>	<u>5 to 9</u> <u>Number</u>	<u>10 to 14</u> <u>Number</u>	<u>15 to 19</u> <u>Number</u>
Under 25	137	14	-	-
25-29	128	61	3	-
30-34	147	87	27	-
35-39	185	132	41	16
40-44	150	135	75	50
45-49	114	102	89	79
50-54	91	72	73	86
55-59	63	59	64	56
60-64	28	23	24	21
65-69	18	14	11	5
70 & over	20	10	5	3
Totals	1,081	709	412	316

<u>Age</u>	<u>Years of Service</u>			
	<u>20 to 24</u> <u>Number</u>	<u>25 to 29</u> <u>Number</u>	<u>30 & Up</u> <u>Number</u>	<u>All Years</u> <u>Number</u>
Under 25	-	-	-	151
25-29	-	-	-	192
30-34	-	-	-	261
35-39	2	-	-	376
40-44	11	-	-	421
45-49	41	7	-	432
50-54	44	28	6	400
55-59	39	14	6	301
60-64	13	4	1	114
66-69	7	4	5	64
70 & over	1	-	3	42
Totals	158	57	21	2,754

MONTANA VOLUNTEER FIREFIGHTERS' COMPENSATION ACT
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 11
DISTRIBUTION OF RETIRED MEMBERS

Age	Service Retirees		Disabled Retirees		Survivors	
	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
Under 40	-	-	-	-	-	-
40-44	-	-	-	-	-	-
45-49	-	-	-	-	-	-
50-54	-	-	-	-	2	102
55-59	89	151	-	-	2	132
60-64	185	135	2	150	2	121
65-69	213	129	-	-	-	-
70-74	177	128	-	-	1	83
75-79	139	126	-	-	-	-
80-84	89	123	-	-	-	-
85-89	45	115	-	-	-	-
90-94	19	125	-	-	-	-
95-99	1	75	-	-	-	-
100 & over	-	-	-	-	-	-
TOTALS	957	130	2	150	7	113

TABLE 12
DISTRIBUTION OF VESTED INACTIVE MEMBERS

Age	Number
Under 30	-
30-34	2
35-39	9
40-44	73
45-49	174
50-54	185
55-59	138
60-64	57
65-69	27
70 & over	22
Total	687